

Rates and Correlates of Seeking Mental Health Services Among Cambodian Refugees

Grant N. Marshall, PhD, S. Megan Berthold, PhD, Terry L. Schell, PhD, Marc N. Elliott, PhD, Chi-Ah Chun, PhD, and Katrin Hambarsoomians, MS

Cambodian refugees have high rates of post-traumatic stress disorder (PTSD) and major depression disorder 2 decades after being subjected to one of the most brutal and traumatic conflicts of the past century. A recent household survey of the largest US community of Cambodian refugees reported high past 12-month prevalence rates: 62% for PTSD and 51% for major depression.¹ These rates are much greater than those found among the general population (PTSD=3.5%; major depression=6.7%),² which suggests a substantial need among Cambodian refugees for mental health services. Yet, little is known about Cambodian refugees' help-seeking behavior. Because depression is a key component of overall disease burden,³ and because PTSD is a notable contributor to disease burden, especially in countries wracked by violence,⁴ understanding the help-seeking behavior of refugees afflicted with these disorders is a significant public health issue.

Numerous studies have reported that Asian Americans in general tend to underuse mental health services^{5–8} Although these observations do not in themselves indicate an unmet need for psychiatric services, such findings typically support a hypothesis that Asian Americans with mental health problems are less likely than their non-Asian counterparts to contact health service providers for assistance.⁹ Moreover, at least 1 investigation of data from the Epidemiological Catchment Area Study suggested that Asian Americans were less likely than White Americans to talk with a physician or mental health professional about mental health problems, even after the investigators adjusted for unmet need.¹⁰

Similarly, Cambodian refugees are often viewed as underusing mental health services despite considerable unmet need, although virtually all data are from small samples or from samples where representativeness is uncertain.^{11,12} In perhaps the most rigorous examination of this issue, Blair found that, despite the

Objectives. We assessed the rates and correlates of seeking mental health services among a probability sample of Cambodian refugees who needed such services.

Methods. Interviewers conducted face-to-face interviews with a representative sample drawn from the largest US community of Cambodian refugees. The analytic sample included 339 persons who met past 12-month criteria for posttraumatic stress disorder, major depression disorder, or alcohol use disorder. Respondents described contact with service providers for psychological problems during the preceding 12 months. We examined bivariate and multivariate predictors of seeking services.

Results. Respondents reported high rates of contact with both medical care providers (70%) and mental health care providers (46%). Seeking services from both types of providers was associated with lack of English-speaking proficiency, unemployment, 3 or fewer years of preimmigration education, and being retired or disabled. Women, individuals with health insurance, and persons receiving government assistance also were more likely to seek services.

Conclusions. Cambodian refugees with mental health problems had high rates of seeking service for psychological problems during the preceding 12 months. Research is needed to examine the effectiveness of services received by Cambodian refugees. (*Am J Public Health.* 2006;96:1829–1835. doi:10.2105/AJPH.2006.086736)

high prevalence of PTSD and major depression, only 9% of 124 Cambodian refugees who resided in Utah in 1991 reported receipt of mental health treatment of any kind.¹¹ Because these data are 15 years old and were obtained from a sample of individuals who lived in a relatively small and isolated Cambodian refugee community, additional research is needed.

Much attention has been paid to understanding the sociodemographic correlates of unmet need for mental health services.¹³ For example, Kessler found that women were more likely than men to seek treatment for mental health problems.¹⁴ Additional research has suggested that younger adults are more likely than older adults to seek assistance for a mental health problem^{15,16} and that uninsured individuals are less likely than insured individuals to seek care.¹⁷ Unmet mental health need also is associated with a lack of English-speaking proficiency¹⁸ and low education levels.¹⁹ By contrast with the growing literature on the correlates of unmet need and mental health service use among the general population, no research has studied the

factors associated with service use among Cambodian refugees.

Although empirical data are lacking, patterns of seeking service among Cambodian refugees may not follow those of other US-born or immigrant Asian Americans because of the unique history of the Cambodian refugee community. The estimated population of Cambodia was 7.1 million in 1975, when the Khmer Rouge took power, and as many as 2 million Cambodians died during the 4-year Khmer Rouge reign.²⁰ Approximately 1 million more were killed during the civil wars before and after this period.²¹

Because of the high prevalence of mental health problems,¹ Cambodian refugees likely have a considerably greater need for mental health services compared with other US-born or immigrant Asian Americans. Moreover, the most recent census data show that Cambodian refugees rely far more heavily on public assistance compared with the general public and most other Asian Americans.²² Finally, unlike the general population and many other Asian Americans, Cambodian refugees—by

virtue of having been granted refugee status—had more extensive contact with social service agencies upon arrival in the United States. Our goal was to identify the rates and correlates of seeking mental health services among a representative sample of Cambodian refugees drawn from the largest community of Cambodian refugees in the United States.

METHODS

Sample Design and Participants

We selected the sample from Cambodian immigrants who resided in Long Beach, California—home to the largest single concentration of Cambodian refugees in the United States—between 2003 and 2005. Our sample was drawn from a geographically contiguous area composed of the 4 census tracts with the largest proportion of Cambodians. We conducted a 3-stage random sampling of individuals in households within census blocks. During the first stage, we selected a simple random sample of census blocks. A community expert then classified all 5555 households on the selected blocks as either likely (18%) or unlikely (82%) to be Cambodian households on the basis of visual signs, such as plants favored by the community growing in the lawn or placed on the front porch (e.g., lemon grass, bamboo), footwear on the porch, or Buddhist altars in the window.

The second stage consisted of a stratified random sample of households ($n=2059$) in which we oversampled households judged by the community expert to be likely to have Cambodian residents. Selected households were then screened to determine whether they had at least 1 eligible resident. Individuals were eligible if they were aged 35 to 75 years, had lived in Cambodia during some portion of the Khmer Rouge regime (April 1975 to January 1979), and spoke Khmer (official language of Cambodia). We successfully screened 2001 (97%) of the sampled households; 586 households (29%) had 719 eligible Cambodians.

During the third stage, a single eligible individual was selected at random from each household. Of selected individuals, 527 (90%) agreed to participate in the survey, which resulted in an overall response rate of 87%; 37 individuals who migrated to the

United States as immigrants rather than refugees were excluded from analyses, which resulted in a sample of 490 individuals.

Our analytic sample was restricted to the 339 participants who met diagnostic criteria for PTSD, major depression disorder, or alcohol use disorder. Past 12-month diagnoses of PTSD and major depression were assessed with the Composite International Diagnostic Interview, Version 2.1 (CIDI).²³ The CIDI was designed for lay administration and is keyed to *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*²⁴ criteria. Research has shown the cross-cultural applicability of the CIDI^{25–27} and its reliability and validity.^{27–30}

We used the Alcohol Use Disorders Identification Test,³¹ which was developed as part of an international World Health Organization collaborative project, to screen for alcohol use disorder. Perhaps the most widely used and well-validated screener for alcohol use disorder,³² this instrument consists of 10 items; responses to each question are scored from 0 to 4, and scores of 7 for women and 8 for men reflect a probable alcohol use disorder.³³

Interviewers

The interview team was composed of 5 bilingual lay interviewers, who were themselves Cambodian refugees and were required to read, write, and speak both Khmer and English fluently. Interviewers received extensive training before conducting interviews, and they were actively supervised throughout data collection. Data were obtained via face-to-face fully structured interviews that took place in participants' homes between October 2003 and February 2005; all interviews were conducted in Khmer.

Procedures

All informed consent materials were read verbatim, questions were answered, and written informed consent was obtained. After the interview, participants received a nominal financial incentive.

In accordance with recommended procedures,³⁴ instruments were translated and back-translated: 2 Cambodian translators translated all English measures into Khmer, and the Khmer version of the survey was then back-translated into English by a third Khmer translator to ensure equivalency and

to identify discrepancies between the 2 English versions. Discrepancies were reconciled with the aid of the 3 original translators and 1 additional translator who had not been involved in either of the initial translations.

Extensive development work preceded finalization of the instrument. We held focus groups with community experts to identify topics of potential interest and to obtain feedback on initial versions of the instruments. Comments from expert advisors, including providers of mental health services to this community, were integrated into successive versions of the interview in iterative fashion. The instruments were then pretested in both English and Khmer with multiple respondents to identify areas of possible confusion.

Measures

Sociodemographic variables. The survey instrument assessed participants' age, gender, marital status, education, employment, health insurance status, self-assessed English-speaking proficiency (not at all, poor, fair, or good), household income, and whether they were currently receiving government assistance. For analytic purposes, income was expressed as a proportion of the federal poverty level. For example, families with incomes at the federal poverty level received a score of 100%; family incomes that were twice that level receive a score of 200%.

Seeking services for mental health problems. Participants were asked if they had visited "a mental health professional such as a psychologist, counselor or social worker for emotional and psychological problems in the past 12 months." They also were asked if they had visited "a Western medical care provider such as a family or primary care doctor for emotional and psychological problems in the past 12 months."

Premigration trauma exposure. To assess premigration trauma exposure, respondents were asked whether they had experienced each of 35 events before immigrating to the United States. We drew items from a modified version of the 17-item Cambodian Harvard Trauma Questionnaire,³⁵ and additional trauma items were taken from the 46-item Bosnian version of the Harvard Trauma Questionnaire.³⁶ The Harvard Trauma Questionnaire is the most widely used measure of its kind and has been translated into 35 languages.³⁷

Postmigration trauma exposure. To assess exposure to violence in the United States, we used a modified version of the Survey of Exposure to Community Violence.³⁸ Numerous studies have documented the reliability and validity of this instrument.^{39–41} Respondents indicated whether they had witnessed or directly experienced each of 11 events since arriving in the United States. We summed positively endorsed premigration and postmigration trauma exposure items to create separate exposure indexes.

Symptom severity. Three indexes of symptom severity or functional impairment because of emotional problems were assessed: separate indexes of PTSD and major depression symptom severity were created by summing across the dichotomous CIDI items that assess PTSD and major depression, respectively, and an additional index of functional impairment associated with emotional problems was measured with the mental health items from the 12-Item Short-Form Health Survey (SF-12).⁴² The SF-12 is one of the most widely used measures of health-related functional impairment⁴³ and has previously been used with Southeast Asian refugee samples.⁴⁴ The mental health SF-12 items were scaled to fall in a 0–1 range, with higher scores indicating more impairment, and were then averaged to reflect overall functional impairment because of emotional problems. We used these indexes to adjust for possible covariation of symptom severity or functional impairment with help-seeking behavior.

Statistical Analysis

We used design weights in our analyses and corrected for the design effects of both weighting and clustering. Inverse-probability design weights accounted for the underrepresentation of eligible persons in residences judged unlikely to house Cambodians and for individuals from households with more than 1 eligible resident. Nonparticipation rates were low, and there was no statistically significant ($P < .05$) evidence that refusal was associated with variables assessed during our prescreening (census tract, age, and gender). Thus, nonresponse weights were not constructed. We performed statistical analyses with SAS/STAT software, version 9.1 (SAS Institute Inc, Cary, NC).

The rates of seeking service with physicians and mental health specialists were computed for the whole sample and within subpopulations defined by several demographic and psychological factors. We tested differences in the rates of seeking service across these subpopulations with bivariate logistic regressions. We also used multivariate logistic regression to investigate rates of seeking service across subpopulations. Variables were selected as covariates when they were plausible causes of services use, specifically when they clearly preceded services use (e.g., gender) or when they reflected need for services (e.g., number of symptoms). The covariates included functional impairment from emotional problems, number of depressive symptoms, number of PTSD symptoms, extent of premigration

trauma exposure, postmigration trauma exposure, age, gender, premigration education, and year of immigration. We used recycled predictions derived from these multivariate logistic regressions to obtain covariate-adjusted rates of seeking service.⁴⁵ We used the delta method to determine the confidence intervals for these estimates.⁴⁶

RESULTS

Sample characteristics are shown in Table 1. All participants met criteria for at least 1 of the 3 psychiatric disorders: 88% met criteria for PTSD, 76% met criteria for major depression, and 5% met criteria for alcohol use disorder. Few participants (21%) reported English-speaking proficiency (good/fair vs poor/not at all), and only 16% reported having a high-school degree.

TABLE 1—Demographic Characteristics of Study Participants (N = 339, unweighted)

	Unweighted no.	Weighted Percentage or Mean (SD)
Visited any Western medical care provider in past 12 months	230	70
Visited any Western mental health care provider in past 12 months	162	46
Mean age, y	...	53.7 (10.9)
Mean year of immigration	...	1983.4 (3.9)
Female	210	57
English-speaking	73	21
Marital status		
Married/cohabitating	204	67
Widowed	101	25
Single/separated/divorced	34	9
Premigration education ≤ 3 y	192	54
High-school graduate or equivalent	47	16
Work status		
Employed	58	17
Retired/disabled	190	57
Unemployed/not employed	91	25
Family income, % of federal poverty level		
< 100	254	76
100–200	70	19
> 200	15	5
Receiving government assistance	279	83
Have health insurance	307	91
Posttraumatic stress disorder	301	88
Major depression disorder	260	76
Alcohol use disorder	14	5

Note. Analysis was weighted and adjusted for clustering caused by the sample design. The work status category “not employed” contains participants who were not seeing work.

TABLE 2—Proportion of Participants Who Visited Any Western Medical Care Provider for Psychological Problems During the Preceding 12 Months (N = 230, Unweighted)

	Weighted, Unadjusted ^a			Weighted, Covariate Adjusted ^{a,b}		
	Percentage (95% CI)	Wald χ^2 Statistic ^c	P	Percentage (95% CI)	t Test Statistic ^c	P
Overall	70 (64,76)	...	...	...	...	...
Age, y						
55–74	78 (71,85)	9.78	.003	77 (71,83)	3.14	.003
35–54	62 (54,70)			63 (55,71)		
Gender						
Female	78 (73,84)	8.19	.006	79 (74,84)	4.08	<.001
Male	59 (47,71)			56 (44,67)		
English language						
Proficient	43 (29,56)	21.05	<.001	56 (39,72)	-2.57	.013
Not proficient	77 (71,83)			74 (69,79)		
Marital status ^d						
Married/cohabitating	66 (58,74)	4.78	.033	69 (63,75)	-0.60	.550
Widowed	80 (72,88)	7.13	.010	69 (63,75)	0.37	.711
Single/separated/divorced	69 (51,87)	0.01	.916	72 (54,91)	0.26	.726
Premigration education						
≤ 3 y	76 (69,82)	4.50	.038	75 (69,82)	2.48	.016
> 3 y	63 (54,73)			63 (56,71)		
High-school graduate or equivalent						
Yes	57 (38,76)	2.33	.133	70 (55,84)	-0.04	.968
No	72 (66,79)			70 (64,76)		
Work status ^d						
Employed	25 (10,39)	29.86	<.001	40 (23,57)	-4.36	<.001
Retired/disabled	84 (79,90)	33.88	<.001	82 (75,88)	3.99	<.001
Unemployed/not employed	69 (57,80)	0.07	.786	68 (57,80)	-0.33	.741
Family income, ^d % of federal poverty level						
< 100	73 (66,80)	4.19	.045	72 (65,78)	1.22	.227
100–200	68 (57,79)	0.17	.682	64 (55,74)	-1.16	.249
> 200	34 (4,63)	4.68	.035	67 (37,96)	-0.28	.784
Receiving government assistance						
Yes	77 (71,83)	22.02	<.001	75 (69,82)	4.29	<.001
No	33 (19,47)			45 (29,60)		
Have health insurance						
Yes	76 (70,82)	20.77	<.001	74 (69,79)	4.64	<.001
No	9 (0,20)			18 (1,36)		

Note. CI = confidence interval. Analysis was weighted and adjusted for clustering caused by the sample design. The work status category “not employed” contains participants who were not seeking work.

^aAnalyses were weighted and adjusted for clustering caused by the sample design.

^bPercentages were adjusted for the years of education completed overseas, age, gender, year of immigration to the United States, functional impairment associated with emotional problems, number of depressive and posttraumatic stress disorder symptoms, extent of trauma experienced before coming to the United States, and extent of trauma experienced in the United States.

^cDegree of freedom = 1 for all tests.

^dFor each category of this variable, the numerator degree of freedom for the Wald χ^2 test was equal to 1 because the comparison group was the union of all the other categories.

medical care provider for mental health help was more common among individuals who were older, female, lacking English-speaking proficiency, married, widowed, retired or disabled, relatively poor, and receiving government assistance. Individuals who had health insurance and little premigration education also were more likely to seek help. After we adjusted for several covariates that might influence seeking service (e.g., symptom severity, trauma severity), the following remained associated with seeking service: age, gender, English-speaking proficiency, education, employment status, retirement or disability, receiving government assistance, and having health insurance. Marital status and income were no longer statistically significant.

Table 3 shows bivariate and covariate-adjusted rates of contact with mental health care providers. Approximately 46% of the sample reported having had contact with a mental health care provider for emotional or psychological problems during the past 12 months. Similar to the predictors of seeking service from Western medical care providers, contact with mental health care providers was more common among individuals who had health insurance and who were female, lacking English-speaking proficiency, less educated, retired or disabled, living in poverty, and receiving government assistance. After we adjusted for several covariates that were hypothesized to influence seeking service, the following remained associated with seeking service: gender, English-speaking proficiency, premigration education, employment status, retirement or disability, income, receiving government assistance, and having health insurance. High-school education was no longer statistically significant.

DISCUSSION

We conducted the first household survey of the largest Cambodian refugee community in the United States, and our study provides key information about rates and correlates of seeking service for mental health problems. Our core findings about rates of seeking service among Cambodian refugees with probable diagnoses of PTSD, major depression, or

Most lived in poverty, received government assistance, and had some form of health insurance.

Table 2 shows bivariate and covariate-adjusted rates of contact with medical care providers for mental health services. Nearly

70% of the sample reported having had contact with a Western medical care provider for emotional or psychological problems during the past 12 months. On the bivariate level, contact with a Western

TABLE 3—Proportion of Participants Who Visited Any Western Mental Health Care Provider for Psychological Problems During the Preceding 12 Months (N = 162, Unweighted)

	Weighted, Unadjusted ^a			Weighted, Covariate Adjusted ^{a,b}		
	Percentage (95% CI)	Wald χ^2 Statistic ^c	P	Percentage (95% CI)	t Test Statistic ^c	P
Overall	46 (40, 53)	...	...	...	...	...
Age, y						
55–74	45 (34, 55)	0.18	.673	44 (33, 54)	-0.91	.365
35–54	48 (39, 57)			49 (41, 58)		
Gender						
Female	56 (48, 64)	9.14	.004	56 (49, 64)	3.35	.001
Male	34 (23, 46)			33 (21, 43)		
English language						
Proficient	21 (11, 31)	21.19	<.001	29 (14, 43)	-2.32	.024
Not proficient	53 (46, 61)			50 (42, 59)		
Marital status ^d						
Married/cohabitating	44 (36, 51)	1.42	.238	46 (38, 53)	-0.39	.702
Widowed	56 (43, 70)	3.65	.061	52 (38, 67)	0.97	.335
Single/separated/ divorced	39 (17, 62)	0.40	.532	40 (13, 66)	-0.58	.565
Premigration education						
≤ 3 y	54 (45, 62)	4.65	.035	54 (45, 62)	2.48	.016
> 3 y	38 (27, 49)			38 (29, 48)		
High-school graduate or equivalent						
Yes	27 (12, 43)	6.01	.017	39 (18, 59)	-0.87	.391
No	50 (44, 57)			48 (40, 55)		
Work status ^d						
Employed	8 (0, 18)	30.28	<.001	13 (0, 30)	-2.69	.009
Retired/disabled	58 (49, 67)	17.73	<.001	59 (49, 69)	4.44	<.001
Unemployed/not employed	47 (37, 58)	0.03	.867	41 (31, 51)	-1.24	.220
Family income, ^d % of federal poverty level						
< 100	51 (43, 59)	8.95	.004	49 (41, 58)	1.86	.068
100–200	40 (29, 52)	1.27	.264	40 (30, 51)	-1.07	.289
> 200	4 (0, 12)	9.34	.003	11 (0, 33)	-2.10	.041
Receiving government assistance						
Yes	53 (45, 60)	19.17	<.001	51 (43, 58)	3.20	.002
No	16 (6, 27)			22 (9, 35)		
Have health insurance						
Yes	51 (44, 58)	20.13	<.001	49 (42, 56)	3.08	.003
No	2 (0, 7)			4 (0, 13)		

Note. CI = confidence interval.

^aAnalyses were weighted and adjusted for clustering caused by the sample design.

^bPercentages were adjusted for the years of education completed overseas, age, gender, year of immigration to the United States, functional impairment associated with emotional problems, number of depressive and posttraumatic stress disorder symptoms, extent of trauma experienced before coming to the United States, and extent of trauma experienced in the United States.

^cDegree of freedom = 1 for all tests.

^dFor each category of this variable, the numerator degree of freedom for the Wald χ^2 test was equal to 1 because the comparison group was the union of all the other categories.

in Cambodia. In fact, these rates exceeded those of Wang et al., who studied a nationally representative sample of individuals with documented need.¹⁶ They reported that rates of seeking service among persons with any diagnosed psychiatric disorder were approximately 22% for mental health care and 36% for medical providers. Thus, our data suggest that the lack of seeking service in itself may not be a sufficient or accurate explanation for the mental health problems that characterize the Cambodian refugee community.

Second, factors traditionally associated with unmet need for mental health services were actually positively correlated with seeking service from both medical care and mental health care providers. That is, persons who were most economically and socially vulnerable were more likely to have sought assistance. In particular, lack of English-speaking proficiency, little premigration education, and being retired or disabled were associated with a greater likelihood of having had contact with a service provider during the preceding 12 months. These results held even after we adjusted for factors such as extent of symptoms and level of functional impairment.

To better understand these seemingly counterintuitive findings, it is useful to consider several factors that may reduce barriers to seeking mental health services among Cambodian refugees. Most obviously, Cambodian refugees have a far greater mental health burden compared with other US-born and immigrant Asian Americans. Cambodians' need for mental health services may simply overwhelm the typical barriers to care that other populations find. Moreover, unlike other US-born or immigrant Asian Americans, many Cambodian refugees were immediately integrated into the social services network upon arrival in the United States. This involvement may have accustomed these refugees to contact with social and health service providers, thus lowering impediments to seeking service.

The recent experiences of Cambodian refugees may have cultivated a view of mental illness that is not incompatible with seeking service. Although Asian cultures tend to attribute mental illness to individual weakness, moral transgressions, and genetic heritability,⁴⁹ Cambodian refugees were the

alcohol use disorder are counter to prevailing views in 2 significant respects.

First, contrary to the often reported perception that Cambodian refugees rarely seek help

for mental health problems,^{47,48} we found relatively high rates of past 12-month contact with both medical care and mental health care service providers 2 decades after their ordeal

survivors of genocidal atrocities that were largely beyond their control. Thus, the locus of responsibility for forms of mental illness associated with trauma might have shifted from internal to external sources, thereby potentially lessening the stigma of seeking services. Proximity to large numbers of others who were suffering similar fates also may have served to reduce the sense of personal shame associated with seeking service.

Moreover, most Cambodian refugees have publicly funded health care coverage because of poverty or disability, and insurance coverage removes a significant barrier to service seeking.¹⁷ Finally, although our study did not directly address this possibility, some respondents may have sought regular contact with mental health providers in order to maintain disability benefits.

A potential key to resolving the apparent paradox that certain characteristics often associated with unmet need for services were actually associated with a greater likelihood of seeking service may reside in the realization that Cambodian refugees are a uniquely disadvantaged group. Whereas the typical study attempts to elucidate predictors of seeking service among groups that are heterogeneous with respect to need and resources, the majority of Cambodian refugees have both poor mental health and minimal economic resources. Factors that predict seeking service among more homogeneous samples may differ substantially from those associated with seeking service among heterogeneous groups.

When interpreting these findings, certain limitations should be considered. As is the case with much psychiatric epidemiology, the research design relied upon retrospective recall of symptoms and seeking service. Such recall is vulnerable to memory biases.⁵⁰ Moreover, because our sample resided in a single Cambodian refugee community, it may not have been representative of the broader population of Cambodian refugees in the United States. Nonetheless, the sample was representative of the largest US community of Cambodian refugees and was drawn from a study that achieved a high response rate. Both of the foregoing factors minimize shortcomings often found in research on refugee and immigrant populations.

Limitations also may exist with respect to the instruments we used. Some researchers have expressed concern that the CIDI may overestimate prevalence compared with other lay-administered diagnostic tools.⁵¹ However, available data indicate that the CIDI produces prevalence estimates very similar to those derived from clinician-administered diagnostic assessments.⁵² Although evidence points to the validity of the CIDI for use with Khmer-speaking samples,^{1,25} there has been little investigation of the psychometric properties of the CIDI within this population. Further investigation also is needed to establish the reliability and validity of other study instruments for use with Khmer-speaking Cambodians.

Finally, our study addressed whether Cambodian refugees had sought help for mental health problems during the preceding 12 months. We did not examine whether persons actually received mental health services, and we did not evaluate the nature, duration, and scope of services received. Although the high rates of service contact may constitute a hopeful sign that Cambodian refugees are receiving needed treatment, this is not necessarily the case. Indeed, some researchers have noted that rather than seeking help from professionals, most Cambodian refugees receive mental health treatment from paraprofessionals, who may not have the training to provide the best possible care.⁵³ Scarcity of Khmer-speaking health care providers, and the subsequent need to rely heavily on interpreters, also raise issues about treatment delivery.⁵⁴

Cambodian refugees with psychiatric problems had exceptionally high rates of receiving mental health services. These rates, coupled with the high prevalence of mental health problems within this community,¹ raise questions about the adequacy of policies and practices directed at improving the mental health and well-being of Cambodian refugees. Research on treatment effectiveness is needed to evaluate the services received by this troubled community. ■

About the Authors

Grant N. Marshall, S. Megan Berthold, Terry L. Schell, Marc N. Elliott and Katrin Hambarsoomians are with the RAND Corporation, Santa Monica, Calif. Chi-Ah Chun is with the Department of Psychology, California State University, Long Beach.

Requests for reprints should be sent to Grant N. Marshall, PhD, RAND Corporation, 1776 Main St, Santa Monica, CA 90407 (e-mail: grantm@rand.org).

This article was accepted May 25, 2006.

Contributors

G.N. Marshall designed and obtained funding for the study, contributed to instrument development, and prepared the first draft. M.N. Elliott designed the study, developed the sampling plan and data analysis, and helped write the article. T.L. Schell contributed to instrument development, study design, data analysis, interpretation, and article preparation. S.M. Berthold interpreted data and assisted with article preparation. C.-A. Chun contributed to instrument development, data interpretation, and article preparation. K. Hambarsoomians conducted statistical analyses and contributed to article preparation.

Acknowledgments

We thank the RAND Survey Research team—Judy Perlman, Can Du, and Crystal Kollross—for assisting with data collection. We gratefully acknowledge the contribution of our interviewers and community advisors to the success of this research. We particularly thank Bryant Ben, who served as both community adviser and lead interviewer, for his wise counsel and steadfast effort. We also are indebted to the research participants without whom this study would not have been possible. We thank Eunice Wong of the RAND Corporation and David Takeuchi of the University of Washington, Seattle, for their insightful comments. This study was supported by the National Institute of Mental Health (grant R01MH059555) and the National Institute on Alcohol Abuse and Alcoholism (grant R01AA013818).

Human Participant Protection

The study protocol was approved and monitored by the institutional review boards of the RAND Corporation and California State University at Long Beach.

References

1. Marshall GN, Schell TL, Elliott MN, Berthold SM, Chun C. Mental health of Cambodian refugees 2 decades after resettlement in the United States. *JAMA*. 2005;294:571–579.
2. Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62:617–627.
3. Ustun TB, Kessler RC. Global burden of depressive disorders: the issue of duration. *Br J Psychiatry*. 2002;181:181–183.
4. Kessler RC. Posttraumatic stress disorder: the burden to the individual and to society. *J Clin Psychiatry*. 2000;61(suppl 5):4–12.
5. Chen S, Sullivan NY, Lu YE, Shibusawa T. Asian Americans and mental health services: a study of utilization patterns in the 1990s. *J Ethnic Cultur Diversity Soc Work*. 2003;12:19–42.
6. Cheung FK, Snowden LS. Community mental health and ethnic minority populations. *Community Ment Health J*. 1990;26:277–291.
7. Matsuoaka JK, Breaux C, Ryujin DH. National

- utilization of mental health services by Asian Americans/Pacific Islanders. *J Community Psychol*. 1997;25:141–145.
8. Sue S, Fujino DC, Hu L, Takeuchi DT, Zane NWS. Community mental health services for ethnic minority groups: a test of the cultural responsiveness hypothesis. *J Consult Clin Psychol*. 1991;59:533–540.
 9. Lin KM, Cheung F. Mental health issues for Asian Americans. *Psychiatr Serv*. 1999;50:774–780.
 10. Zhang AY, Snowden LR, Sue S. Differences between Asian and white Americans' help seeking and utilization patterns in the Los Angeles area. *J Community Psychol*. 1998;26:317–326.
 11. Blair RG. Mental health needs among Cambodian refugees in Utah. *Int Soc Work*. 2001;44:179–196.
 12. Cheung P, Spears G. Illness aetiology constructs, health status and use of health services among Cambodians in New Zealand. *Aust N Z J Psychiatry*. 1995;29:257–265.
 13. McAlpine DD, Mechanic D. Utilization of specialty mental health care among persons with severe mental illness: the roles of demographics, need, insurance, and risk. *Health Serv Res*. 2000;35:277–292.
 14. Kessler RC. Gender differences in the prevalence and correlates of mood disorders in the general population. In: Steiner M, Yonkers KA, Eriksson E, eds. *Mood Disorders in Women*. London, England: Martin Dunitz Ltd; 2000:15–33.
 15. Klap R, Unroe KT, Unutzer J. Caring for mental illness in the United States: a focus on older adults. *Am J Geriatr Psychiatry*. 2003;11:517–524.
 16. Wang PS, Lane M, Olsson M, Pincus HA, Wells KB, Kessler RC. Twelve-month use of mental health services in the United States: results from the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62:629–640.
 17. Sturm R, Sherbourne CD. Managed care and unmet need for mental health and substance abuse care in 1998. *Psychiatr Serv*. 2000;51:177.
 18. Fiscella K, Franks P, Doeschner MP, Saver BG. Disparities in health care by race, ethnicity, and language among the insured: findings from a national sample. *Med Care*. 2002;40:52–59.
 19. Barker PR, Epstein JF, Hourani LL, et al. Patterns of mental health service utilization and substance use among adults, 2000 and 2001. Available at: http://oas.samhsa.gov/mhtx/ch2.htm#fig_2.9. Accessed May 12, 2006.
 20. Food and Agriculture Organization of the United Nations. FAO statistical databases. Available at: <http://faostat.fao.org/faostat/>. Accessed May 19, 2006.
 21. Rummel RJ. *Death by Government*. New Brunswick, NJ: Transaction Publishers; 1994.
 22. Niedzwiecki M, Duong TC. Southeast Asian American statistical profile. Available at: <http://www.searac.org/seastatprofilemay04.pdf>. Accessed May 3, 2006.
 23. International Diagnostic Interview (CIDI), Version 2.1. Geneva, Switzerland: World Health Organization; 1997.
 24. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 4th ed. Washington, DC: American Psychiatric Association; 1994.
 25. de Jong JTVM, Komproe IH, Van Ommeren M, et al. Lifetime events and posttraumatic stress disorder in 4 postconflict settings. *JAMA*. 2001;286:555–562.
 26. Robbins LN, Wing J, Wittchen HU, et al. The Composite International Diagnostic Interview: an epidemiologic instrument suitable for use in conjunction with different diagnostic systems and in different cultures. *Arch Gen Psychiatry*. 1988;45:1069–1077.
 27. Wittchen HU, Robbins LN, Cottier LB, Sartorius N, Burke JD, Regier D. Cross-cultural feasibility, reliability and sources of variance of the Composite International Diagnostic Interview (CIDI). *Br J Psychiatry*. 1991;159:645–653.
 28. Andrews G, Peters L. The psychometric properties of the Composite International Diagnostic Interview. *Soc Psychiatry Psychiatr Epidemiol*. 1998;33:80–88.
 29. Andrews G, Peters L, Guzman AM, Bird K. A comparison of two structured diagnostic interviews: CIDI and SCAN. *Aust N Z J Psychiatry*. 1995;29:124–132.
 30. Wittchen HU. Reliability and validity studies of the WHO-Composite International Diagnostic Interview (CIDI): a critical review. *J Psychiatr Res*. 1994;28:57–84.
 31. Babor TF, de la Fuente JR, Saunders J, Grant M. *AUDIT: The Alcohol Use Disorders Identification Test. Guidelines for Use in Primary Health Care*. Geneva, Switzerland: World Health Organization; 1992.
 32. Reinert DF, Allen JP. The Alcohol Use Disorders Identification Test (AUDIT): a review of recent research. *Alcohol Clin Exp Res*. 2002;26:272–279.
 33. Conigrave KM, Hall WD, Saunders JB. The AUDIT questionnaire: choosing a cutoff score. *Addiction*. 1995;90:1349–1356.
 34. Brislin RW. Back-translation for cross-cultural research. *J Cross-Cult Res*. 1970;1:185–216.
 35. Mollica RF, Caspi-Yavin Y, Bollini P, Truong T, Tor S, Lavelle J. The Harvard Trauma Questionnaire: validating a cross-cultural instrument for measuring torture, trauma, and posttraumatic stress disorder in Indochinese refugees. *J Nerv Ment Dis*. 1992;180:111–116.
 36. Alden K, Ceric I, Kapetanovic A, et al. *Harvard Trauma Manual: Bosnian-Herzegovina Version*. Cambridge, Mass: Harvard Program for Refugee Trauma, Harvard Medical School; 1998:1–200.
 37. Harvard Program in Refugee Trauma. Harvard Trauma Questionnaire. Available at: http://www.hprt-cambridge.org/Layer3.asp?page_id=19. Accessed May 15, 2006.
 38. Richters JE, Saltzman W. *Survey of Exposure to Community Violence: Self-Report Version*. Rockville, Md: National Institute of Mental Health; 1990.
 39. Berman SL, Kurtines WM, Silverman WK, Serafini LT. The impact of exposure to crime and violence on urban youth. *Am J Orthopsychiatry*. 1996;66:329–336.
 40. Feigelman S, Howard DE, Li X, Cross SI. Psychosocial and environmental correlates of violence perpetration among African-American urban youth. *J Adolesc Health*. 2000;27:202–209.
 41. Scarpa A. Community violence exposure in a young adult sample: lifetime prevalence and socioemotional effects. *J Interpers Violence*. 2001;16:36–53.
 42. Ware JE, Kosinski M, Keller SD. A 12-Item Short-Form Health Survey: construction of scales and preliminary tests of reliability and validity. *Med Care*. 1996;34:220–233.
 43. Brazier JE, Roberts J. The estimation of a preference-based measure of health from the SF-12. *Med Care*. 2004;42:851–859.
 44. Steel Z, Silove D, Chey T, Bauman A, Phan T, Phan T. Mental disorders, disability and health service use amongst Vietnamese refugees and the host Australian population. *Acta Psychiatr Scand*. 2005;111:300–309.
 45. Graubard BI, Korn EL. Predictive margins with survey data. *Biometrics*. 1999;55:652–659.
 46. Skinner CJ. Domain means, regression and multivariate analyses. In: Skinner CJ, Holt D, Smith TMF, eds. *Analysis of Complex Surveys*. New York, NY: Wiley; 1989:59–88.
 47. Hoang G, Erickson R. Cultural barriers to effective medical care among Indochinese patients. *Annu Rev Med*. 1985;36:229–239.
 48. Hsu E, Davies CA, Hansen DJ. Understanding mental health needs of Southeast Asian refugees: historical, cultural, and contextual challenges. *Clin Psychol Rev*. 2004;19:3–213.
 49. Uba L. *Asian Americans*. New York, NY: Guilford Press; 1994.
 50. Rogler LH, Malgady RG, Tryon WW. Evaluation of mental health: issues of memory in the Diagnostic Interview Schedule. *J Nerv Ment Dis*. 1992;180:215–222.
 51. Regier DA, Kaelber CT, Rae DS, et al. Limitations of diagnostic criteria and assessment instruments for mental disorders: implications for research and policy. *Arch Gen Psychiatry*. 1998;55:109–115.
 52. Kessler RC, Berglund PA, Walters EE, et al. Methodology for estimating the 12-month prevalence of serious mental illness. In: Manderscheid RW, Henderson MJ, eds. *Mental Health, United States 1998*. Washington, DC: US Government Printing Office; 1998:99–109.
 53. Ying Y, Hu L. Public outpatient mental health services: use and outcomes among Asian Americans. *Am J Orthopsychiatry*. 1994;64:448–455.
 54. Green AR, Ngo-Metzger Q, Legedza AT, Massagli MP, Phillips RS, Iezzoni LI. Interpreter services, language concordance, and health care quality. Experiences of Asian Americans with limited English proficiency. *J Gen Intern Med*. 2005;20:1050–1056.